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Thesis Title: A Study of Colistin Resistance Among Gram Negative Bacteria Isolated from Clinical Samples in Fayoum University Hospital

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ABSTRACT

Background: Antimicrobial resistance is now considered a major crisis to human health in 21st century. Polymixins were ignored for many years because of their toxicity. Now are considered last treatment option for serious infections caused by multidrug resistant gram negative bacteria (MDR-GNB).

Methods: This observational cross- sectional study was conducted over the period from January to June 2023. A total of 115 isolates of MDR-GNB were obtained from patients admitted to different departments of Fayoum University Hospitals. Full identification was done by conventional microbiological methods, Then all isolates were subjected to broth microdilution for determination of Minimum Inhibitory Concentration (MIC) & MacConkey Colistin agar for detection of colistin resistance.

Results: The prevalence of colistin resistance by MIC among MDR-GNB was found to be 12.2% (14 out of 115) as follows: 28.6% among Ecoli, 35.7% among Klebsiella spp, 28.6% among Pseudomonas spp and 7.1% among Acinetobacter spp while the prevalence of resistance by MacConkey colistin agar was found to be 38.2% (44 out of 115) as follows: 40% among Ecoli, 34% among Klebsiella spp, 42.3% among Pseudomonas spp and 40% among Acinetobacter spp with accuracy 88.3%, specificity 81.3% and sensitivity 97.6%.



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Conclusion: The use of MacConkey Colistin agar is an easy method for screening of colistin resistance which is currently a major concern. However, Broth Micro Dilution (BMD) is considered the gold standard.